This module describes different ways to address questions about personality stability across the lifespan. Definitions of the major types of personality stability are provided, and evidence concerning the different kinds of stability and change are reviewed. The mechanisms thought to produce personality stability and personality change are identified and explained.

Learning Objectives

- Define heterotypic stability, homotypic stability, absolute stability, and differential stability.
- Describe evidence concerning the absolute and differential stability of personality attributes across the lifespan.
- Explain the maturity, cumulative continuity, and corresponsive principles of personality development.
- Explain person-environment transactions, and distinguish between active, reactive, and evocative person-environment transactions.
- Identify the four processes that promote personality stability (attraction, selection, manipulation, and attrition). Provide examples of these processes.
- Describe the mechanisms behind the possibility of personality transformation.

Introduction
Personality psychology is about how individuals differ from each other in their characteristic ways of thinking, feeling, and behaving. Some of the most interesting questions about personality attributes involve issues of stability and change. Are shy children destined to become shy adults? Are the typical personality attributes of adults different from the typical attributes of adolescents? Do people become more self-controlled and better able to manage their negative emotions as they become adults? What mechanisms explain personality stability and what mechanisms account for personality change?

Defining Different Kinds of Personality Stability

Something frustrating happens when you attempt to learn about personality stability[1]: As with many topics in psychology, there are a number of different ways to conceptualize and quantify personality stability (e.g., Caspi & Bem, 1990; Roberts, Wood, & Caspi, 2008). This means there are multiple ways to consider questions about personality stability. Thus, the simple (and obviously frustrating) way to respond to most blanket questions about personality stability is to simply answer that it depends on what one means by personality stability. To provide a more satisfying answer to questions about stability, I will first describe the different ways psychologists conceptualize and evaluate personality stability. I will make an important distinction between heterotypic and homotypic stability. I will then describe absolute and differential stability, two ways of considering homotypic stability. I will also draw your attention to the important concept of individual differences in personality development.

**Heterotypic stability** refers to the psychological coherence of an individual's thoughts, feelings, and behaviors across development. Questions about heterotypic stability concern the degree of consistency in underlying personality attributes. The tricky part of studying heterotypic stability is that the underlying psychological attribute can have different behavioral expressions at different ages. (You may already know that the prefix “hetero” means something like “different” in Greek.) Shyness is a good example of such an attribute because shyness is expressed differently by toddlers and young children than adults. The shy toddler might cling...
to a caregiver in a crowded setting and burst into tears when separated from this caregiver. The shy adult, on the other hand, may avoid making eye contact with strangers and seem aloof and distant at social gatherings. It would be highly unusual to observe an adult burst into tears in a crowded setting. The observable behaviors typically associated with shyness “look” different at different ages. Researchers can study heterotypic continuity only once they have a theory that specifies the different behavioral manifestations of the psychological attribute at different points in the lifespan. As it stands, there is evidence that attributes such as shyness and aggression exhibit heterotypic stability across the lifespan (Caspi, Bem, & Elder, 1989). Individuals who act shy as children often act shy as adults, but the degree of correspondence is far from perfect because many things can intervene between childhood and adulthood to alter how an individual develops. Nonetheless, the important point is that the patterns of behavior observed in childhood sometimes foreshadow adult personality attributes.

**Homotypic stability** concerns the amount of similarity in the same observable personality characteristics across time. (The prefix “homo” means something like the “same” in Greek.) For example, researchers might ask whether stress reaction or the tendency to become easily distressed by the normal challenges of life exhibits homotypic stability from age 25 to age 45. The assumption is that this attribute has the same manifestations at these different ages. Researchers make further distinctions between absolute stability and differential stability when considering homotypic stability.

**Absolute stability** refers to the consistency of the level of the same personality attribute across time. If an individual received a score of 45 on a hypothetical measure of stress reaction at age 20 and at age 40, researchers would conclude there was evidence of absolute stability. Questions about absolute stability can be considered at the group level or the individual level. At the group level, it is common for personality researchers to compare average scores on personality measures for groups of different ages. For example, it is possible to investigate whether the average 40-year-old adult has a lower (or higher) level of stress reaction than the average 20-year-old. The answer
to this question would tell researchers something about typical patterns of personality development.

It is important to consider absolute stability from both the group and individual perspectives. The individual level is interesting because different people might have different patterns of absolute change over time. One person might report consistently low levels of stress reaction throughout adulthood, whereas another person may report dramatic increases in stress reaction during her 30s and 40s. These different individual patterns can be present even if the overall trend is for a decline in stress reaction with age. Personality psychology is about individual differences and whether an individual's attributes change or remain the same across time might be an important individual difference. Indeed, there are intriguing hints that the rate and direction of change in characteristics such as stress reaction (or neuroticism) predicts mortality (Mroczek & Spiro, 2007).

**Differential stability** refers to the consistency of a personality attribute in terms of an individual's rank-ordering. A typical question about differential stability might be whether a 20-year-old who is low in stress reaction relative to her same aged peers develops into a 40-year-old who is also low in stress reaction compared to her peers. Differential stability is often interesting because many psychological attributes show average changes across the lifespan. Regardless of average changes with age, however, it is common to assume that more trait-like attributes have a high degree of differential stability. Consider athletic performance as an attribute that may exhibit differential stability. The average 35-year-old is likely to run a 5K race faster than the average 55-year-old. Nonetheless, individuals who are fast relative to their peers in their 30s might also be fast relative to their peers in their 50s. Likewise, even if most people decline on a stress reaction as they age, it is still useful to investigate whether there is consistency over time in their relative standing on this attribute.

**Basic Findings about Absolute and Differential Stability**

**Absolute Stability.** There are two common ways to investigate average levels of personality attributes at different ages. The simplest approach is to conduct a cross-sectional study and compare different age groups on a given attribute assessed at the same time. For instance, researchers might collect data from a sample of individuals ranging in age from 18 to 99 years and compare stress reaction scores for groups of different ages. A more complicated design involves following the same group of individuals and assessing their personalities at multiple time points (often two). This is a longitudinal study, and it is a much better way to study personality stability than a cross-sectional study. If all of the individuals in the sample are roughly the same age at the start of the study, they would all be considered members of the
same birth cohort. One of the chief drawbacks of a cross-sectional study is that individuals who are of different ages are also members of different birth cohorts. Thus, researchers have no way of knowing whether any personality differences observed in a cross-sectional study are attributable to the influence of age per se or birth cohort. A longitudinal study is better able to isolate age effects (i.e., differences in personality related to maturation and development) from cohort effects (i.e., differences in personality related to being born at a particular point in history) than a cross-sectional study. Cohort is a constant (i.e., an unchanging value) in a longitudinal study when all participants start the study at roughly the same age.

A number of large-scale, cross-sectional studies have evaluated age differences in personality (Anusic, Lucas, & Donnellan, 2012; Lucas & Donnellan, 2009; McCrae & Costa, 2003; Soto, John, Gosling, & Potter, 2011; Srivastava, John, Gosling, & Potter, 2003) as have a number of longitudinal studies (Lucas & Donnellan, 2011; Specht, Egloff, & Schmukle, 2011; Terracciano, McCrae, Brant, & Costa, 2005; Wortman, Lucas, & Donnellan, in press). Fortunately, many of the general trends from these different designs converge on the same basic set of findings. Most notably, Roberts, Walton, and Viechtbauer (2006) combined the results of 92 longitudinal studies to provide an overview of absolute changes in personality across the lifespan. They used the Big Five taxonomy (e.g., John, Naumann, & Soto, 2008) to categorize the different personality attributes examined in the individual studies to make sense of the vast literature.

The Big Five domains include extraversion (attributes such as assertive, confident, independent, outgoing, and sociable), agreeableness (attributes such as cooperative, kind, modest, and trusting), conscientiousness (attributes such as hard working, dutiful, self-controlled, and goal-oriented), neuroticism (attributes such as anxious, tense, moody, and easily angered), and openness (attributes such as artistic, curious, inventive, and open-minded). The Big Five is one of the most common ways of organizing the vast range of personality attributes that seem to distinguish one person from the next. This organizing framework made it possible for Roberts et al. (2006) to draw broad conclusions from the literature.

Big 5 Personality Traits (OCEAN)

• Openness
• Conscientiousness
• Extraversion
• Agreeableness
• Neuroticism

If you're curious where you rank on the Big Five Domains, head to “Psychology Today’s” website to take the test for yourself: https://goo.gl/aQTqoD
In general, average levels of extraversion (especially the attributes linked to self-confidence and independence), agreeableness, and conscientiousness appear to increase with age whereas neuroticism appears to decrease with age (Roberts et al., 2006). Openness also declines with age, especially after mid-life (Roberts et al., 2006). These changes are often viewed as positive trends given that higher levels of agreeableness and conscientiousness and lower levels of neuroticism are associated with seemingly desirable outcomes such as increased relationship stability and quality, greater success at work, better health, a reduced risk of criminality and mental health problems, and even decreased mortality (e.g., Kotov, Gamez, Schmidt, & Watson, 2010; Miller & Lynam, 2001; Ozer & Benet-Martínez, 2006; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). This pattern of positive average changes in personality attributes is known as the maturity principle of adult personality development (Caspi, Roberts, & Shiner, 2005). The basic idea is that attributes associated with positive adaptation and attributes associated with the successful fulfillment of adult roles tend to increase during adulthood in terms of their average levels.

Beyond providing insights into the general outline of adult personality development, Roberts et al. (2006) found that young adulthood (the period between the ages of 18 and the late 20s) was the most active time in the lifespan for observing average changes, although average differences in personality attributes were observed across the lifespan. Such a result might be surprising in light of the intuition that adolescence is a time of personality change and maturation. However, young adulthood is typically a time in the lifespan that includes a number of life changes in terms of finishing school, starting a career, committing to romantic partnerships, and parenthood (Donnellan, Conger, & Burzette, 2007; Rindfuss, 1991). Finding that young adulthood is an active time for personality development provides circumstantial evidence that adult roles might generate pressures for certain patterns of personality development. Indeed, this is one potential explanation for the maturity principle of personality development.

It should be emphasized again that average trends are summaries that do not necessarily apply to all individuals. Some people do not conform to the maturity principle of adult personality development states that as we age we adjust our traits to fit with our new, adult responsibilities. [Image: Alex France, https://goo.gl/h12CM3, CC BY-SA 3.0, https://goo.gl/eLCn2O]
principle. The possibility of exceptions to general trends is the reason it is necessary to study individual patterns of personality development. The methods for this kind of research are becoming increasingly popular (e.g., Vaidya, Gray, Haig, Mroczek, & Watson, 2008) and existing studies suggest that personality changes differ across people (Roberts & Mroczek, 2008). These new research methods work best when researchers collect more than two waves of longitudinal data covering longer spans of time. This kind of research design is still somewhat uncommon in psychological studies but it will likely characterize the future of research on personality stability.

**Differential stability.** The evaluation of differential stability requires a longitudinal study. The simplest strategy is to follow a large sample of participants of the same age and measure their personality attributes at two points separated by a meaningful span of time. The researcher then calculates the correlation between scores at the first assessment and scores at the second assessment (a coefficient sometimes called a test-retest correlation or even a stability coefficient). As you know, a correlation coefficient is a numerical summary of the linear association between two variables. Correlations around .1 or –.1 are often called “small” associations, whereas correlations around .50 and –.50 (or larger) are often called “large” associations (Cohen, 1988).

Roberts and DelVecchio (2000) summarized 3,217 test-retest correlations for a wide range of personality attributes reported in 152 longitudinal studies. They used statistical methods to equate the different test-retest correlations to a common interval of about seven years. This allowed them to compare results from studies of differing lengths of time because not all studies followed participants for the same interval of time. Roberts and DelVecchio found that differential stability increased with age. The correlations ranged from about .30 for samples involving young children to about .70 for samples involving older adults. Ferguson (2010) updated and replicated this basic pattern. This pattern of increasing stability with age is called the **cumulative continuity principle of personality development** (Caspi et al., 2005). This general pattern holds for both women and men and applies to a wide range of different personality attributes ranging from extraversion to openness and curiosity. It is important to emphasize, however, that the observed correlations are never perfect at any age (i.e., the correlations do not reach 1.0). This indicates that personality changes can occur at any time in the lifespan; it just seems that greater inconsistency is observed in childhood and adolescence than in adulthood.

**Key Messages So Far**

It is useful to summarize the key ideas of this module so far. The starting point was the
realization that there are several different ways to define and measure personality stability. Heterotypic stability refers to the consistency of the underlying psychological attribute that may have different behavioral manifestations at different ages. Homotypic stability, on the other hand, refers to the consistency of the same observable manifestations of a personality attribute. This type of stability is commonly studied in the current literature, and absolute and differential stability are a focus on many studies. A consideration of the broad literature on personality stability yields two major conclusions.

1. Average levels of personality attributes seem to change in predictable ways across the lifespan in line with maturity principle of personality development. Traits that are correlated with positive outcomes (such as conscientiousness) seem to increase from adolescence to adulthood. This perspective on personality stability is gained from considering absolute stability in the form of average levels of personality attributes at different ages.

2. Personality attributes are relatively enduring attributes that become increasingly consistent during adulthood in line with the cumulative continuity principle. This perspective on stability is gained from considering differential stability in the form of test-retest correlations from longitudinal studies.

In general, the picture that emerges from the literature is that personality traits are relatively enduring attributes that become more stable from childhood to adulthood. Nonetheless, the stability of personality attributes is not perfect at any period in the lifespan. This is an important conclusion because it challenges two extreme perspectives that have been influential in psychological research. More than 100 years ago, the famous psychologist William James remarked that character (personality) was “set like plaster” for most people by age 30. This perspective implies near perfect stability of personality in adulthood. In contrast, other psychologists have sometimes denied there was any stability to personality at all. Their perspective is that individual thoughts and feelings are
simply responses to transitory situational influences that are unlikely to show much consistency across the lifespan. As discussed so far, current research does not support either of these extreme perspectives. Nonetheless, the existence of some degree of stability raises important questions about the exact processes and mechanisms that produce personality stability (and personality change).

The How and Why of Personality Stability and Change: Different Kinds of Interplay Between Individuals and Their Environments

Personality stability is the result of the interplay between the individual and her/his environment. Psychologists use the term *person–environment transactions* (e.g., Roberts et al., 2008) to capture the mutually transforming interplay between individuals and their contextual circumstances. Several different types of these transactions have been described by psychological researchers. **Active person–environment transactions** occur when individuals seek out certain kinds of environments and experiences that are consistent with their personality characteristics. Risk-taking individuals may spend their leisure time very differently than more cautious individuals. Some prefer extreme sports whereas others prefer less intense experiences. **Reactive person–environment transactions** occur when individuals react differently to the same objective situation because of their personalities. A large social gathering represents a psychologically different context to the highly extraverted person compared with the highly introverted person. **Evocative person–environment transactions** occur whenever individuals draw out or evoke certain kinds of responses from their social environments because of their personality attributes. A warm and secure individual invites different kinds of responses from peers than a cold and aloof individual.

Current researchers make distinctions between the mechanisms likely to produce personality stability and the mechanisms likely to produce changes (Roberts, 2006; Roberts et al., 2008). Brent Roberts coined the helpful acronym ASTMA to aid in remembering many of these mechanisms: Attraction (A), selection (S), manipulation...
(M), and attrition (A) tend to produce personality stability, whereas transformation (T) explains personality change.

Individuals sometimes select careers, friends, social clubs, and lifestyles because of their personality attributes. This is the active process of **attraction**—individuals are attracted to environments because of their personality attributes. Situations that match with our personalities seem to feel “right” (e.g., Cesario, Grant, & Higgins, 2004). On the flipside of this process, gatekeepers, such as employers, admissions officers, and even potential relationship partners, often **select** individuals because of their personalities. Extraverted and outgoing individuals are likely to make better salespeople than quiet individuals who are uncomfortable with social interactions. All in all, certain individuals are “admitted” by gatekeepers into particular kinds of environments because of their personalities. Likewise, individuals with characteristics that are a bad fit with a particular environment may leave such settings or be asked to leave by gatekeepers. A lazy employee will not last long at a demanding job. These examples capture the process of **attrition** (dropping out). The processes of selection and attrition reflect evocative person–environment transactions. Last, individuals can actively **manipulate** their environments to match their personalities. An outgoing person will find ways to introduce more social interactions into the workday, whereas a shy individual may shun the proverbial water cooler to avoid having contact with others.

These four processes of attraction, selection, attrition, and manipulation explain how a kind of matching occurs between personality attributes and environmental conditions for many individuals. This positive matching typically produces personality consistency because the “press” of the situation reinforces the attributes of the person. This observation is at the core of the **corresponspive principle of personality development** (Caspi et al., 2005; Roberts, Caspi, & Moffitt, 2003). Preexisting personality attributes and environmental contexts work in concert to promote personality continuity. The idea is that environments often reinforce those personality attributes that were partially responsible for the initial environmental conditions in the first place. For example, ambitious and confident individuals might be attracted to and selected for more demanding jobs (Roberts et al., 2003). These kinds of jobs often require drive, dedication, and achievement striving thereby accentuating dispositional tendencies toward ambition and confidence.

Additional considerations related to person–environment transactions may help to further explain personality stability. Individuals gain more autonomy to select their own environment as they transition from childhood to adulthood (Scarr & McCartney, 1983). This might help explain why the differential stability of personality attributes increases from adolescence into adulthood. Reactive and evocative person–environment transactions also facilitate personality stability. The overarching idea is that personality attributes shape how individuals
respond to situations and shape the kinds of responses individuals elicit from their environments. These responses and reactions can generate self-fulfilling cycles. For example, aggressive individuals seem to interpret ambiguous social cues as threatening (something called a *hostile attribution bias* or a hostile attribution of intent; see Crick & Dodge, 1996; Orobio de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). If a stranger runs into you and you spill your hot coffee all over a clean shirt, how do you interpret the situation? Do you believe the other person was being aggressive, or were you just unlucky? A rude, caustic, or violent response might invite a similar response from the individual who ran into you. The basic point is that personality attributes help shape reactions to and responses from the social world, and these processes often (but not always) end up reinforcing dispositional tendencies.

Although a number of mechanisms account for personality continuity by generating a match between the individual’s characteristics and the environment, personality change or *transformation* is nonetheless possible. Recall that differential stability is not perfect. The simplest mechanism for producing change is a cornerstone of behaviorism: Patterns of behavior that produce positive consequences (pleasure) are repeated, whereas patterns of behavior that produce negative consequences (pain) will diminish (Thorndike, 1933). Social settings may have the power to transform personality if the individual is exposed to different rewards and punishments and the setting places limitations on how a person can reasonably behave (Caspi & Moffitt, 1993). For example, environmental contexts that limit agency and have very clear reward structures such as the military might be particularly powerful contexts for producing lasting personality changes (e.g., Jackson, Thoemmes, Jonkmann, Lüdke, & Trautwein, 2012).

It is also possible that individuals might change their personality attributes by actively striving to change their behaviors and emotional reactions with help from outsiders. This idea lies at the heart of psychotherapy. As it stands, the conditions that produce lasting personality changes are an active area of research. Personality researchers have historically sought to demonstrate the existence of personality stability, and they are now turning their full attention to the conditions that facilitate personality change. There are currently a few examples of interventions that end up producing short-term personality changes (Jackson, Hill, Payne, Roberts, & Stine-Morrow, 2012), and this is an exciting area for future research (Edmonds, Jackson, Fayard, & Roberts, 2008). Insights about personality change are important for creating effective interventions designed to foster positive human development. Finding ways to promote self-control, emotional stability, creativity, and an agreeable disposition would likely lead to improvements for both individuals and society as a whole because these attributes predict a range of consequential life outcomes (Ozer & Benet-Martínez, 2006; Roberts et al.,
Conclusion

There are multiple ways to evaluate personality stability. The existing evidence suggests that personality attributes are relatively enduring attributes that show predictable average-level changes across the lifespan. Personality stability is produced by a complicated interplay between individuals and their social settings. Many personality attributes are linked to life experiences in a mutually reinforcing cycle: Personality attributes seem to shape environmental contexts, and those contexts often then accentuate and reinforce those very personality attributes. Even so, personality change or transformation is possible because individuals respond to their environments. Individuals may also want to change their personalities. Personality researchers are now beginning to address important questions about the possibility of lasting personality changes through intervention efforts.

[1] Throughout most of this module I will use the term stability to refer to continuity, stability/change, and consistency/inconsistency.
Discussion Questions

1. Why is it difficult to give a simple answer to the question of whether personality is stable across the lifespan?

2. What happens during young adulthood that might explain findings about average changes in personality attributes?

3. Why does differential stability increase during adulthood?

4. What are some concrete examples of the ASTMA processes?

5. Can you explain the corresponsive principle of personality development? Provide several clear examples.

6. Do you think dramatic personality changes are likely to happen in adulthood? Why or why not?

7. What kinds of environments might be particularly powerful for changing personality? What specific features of these environments seem to make them powerful for producing change?

8. Is it easy to change your personality in adulthood? What steps do you think are needed to produce noticeable and lasting changes in your personality? What steps are needed to change the personalities of others?

9. Do you find the evidence that personality attributes are relatively enduring attributes reflects a largely positive aspect of adult development or a more unpleasant aspect? Why?
Vocabulary

Absolute stability
Consistency in the level or amount of a personality attribute over time.

Active person–environment transactions
The interplay between individuals and their contextual circumstances that occurs whenever individuals play a key role in seeking out, selecting, or otherwise manipulating aspects of their environment.

Age effects
Differences in personality between groups of different ages that are related to maturation and development instead of birth cohort differences.

Attraction
A connection between personality attributes and aspects of the environment that occurs because individuals with particular traits are drawn to certain environments.

Attrition
A connection between personality attributes and aspects of the environment that occurs because individuals with particular traits drop out from certain environments.

Birth cohort
Individuals born in a particular year or span of time.

Cohort effects
Differences in personality that are related to historical and social factors unique to individuals born in a particular year.

Corresponsive principle
The idea that personality traits often become matched with environmental conditions such that an individual's social context acts to accentuate and reinforce their personality attributes.

Cross-sectional study/design
A research design that uses a group of individuals with different ages (and birth cohorts) assessed at a single point in time.

Cumulative continuity principle
The generalization that personality attributes show increasing stability with age and experience.

**Differential stability**
Consistency in the rank-ordering of personality across two or more measurement occasions.

**Evocative person–environment transactions**
The interplay between individuals and their contextual circumstances that occurs whenever attributes of the individual draw out particular responses from others in their environment.

**Group level**
A focus on summary statistics that apply to aggregates of individuals when studying personality development. An example is considering whether the average score of a group of 50 year olds is higher than the average score of a group of 21 year olds when considering a trait like conscientiousness.

**Heterotypic stability**
Consistency in the underlying psychological attribute across development regardless of any changes in how the attribute is expressed at different ages.

**Homotypic stability**
Consistency of the exact same thoughts, feelings, and behaviors across development.

**Hostile attribution bias**
The tendency of some individuals to interpret ambiguous social cues and interactions as examples of aggressiveness, disrespect, or antagonism.

**Individual level**
A focus on individual level statistics that reflect whether individuals show stability or change when studying personality development. An example is evaluating how many individuals increased in conscientiousness versus how many decreased in conscientiousness when considering the transition from adolescence to adulthood.

**Longitudinal study/design**
A research design that follows the same group of individuals at multiple time points.

**Manipulation**
A connection between personality attributes and aspects of the environment that occurs whenever individuals with particular traits actively shape their environments.
Maturity principle
The generalization that personality attributes associated with the successful fulfillment of adult roles increase with age and experience.

Person–environment transactions
The interplay between individuals and their contextual circumstances that ends up shaping both personality and the environment.

Reactive person–environment transactions
The interplay between individuals and their contextual circumstances that occurs whenever attributes of the individual shape how a person perceives and responds to their environment.

Selection
A connection between personality attributes and aspects of the environment that occurs whenever individuals with particular attributes choose particular kinds of environments.

Stress reaction
The tendency to become easily distressed by the normal challenges of life.

Transformation
The term for personality changes associated with experience and life events.
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About Noba

The Diener Education Fund (DEF) is a non-profit organization founded with the mission of re-inventing higher education to serve the changing needs of students and professors. The initial focus of the DEF is on making information, especially of the type found in textbooks, widely available to people of all backgrounds. This mission is embodied in the Noba project.

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The Diener Education Fund is co-founded by Drs. Ed and Carol Diener. Ed is the Joseph Smiley Distinguished Professor of Psychology (Emeritus) at the University of Illinois. Carol Diener is the former director of the Mental Health Worker and the Juvenile Justice Programs at the University of Illinois. Both Ed and Carol are award-winning university teachers.

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